

REMARKS

Claims 1-24 have been examined. New claims 25-27 have been added to further describe the patentable features of the present invention.

I. Claim Rejections - 35 USC § 112

Claims 1 and 3-6 are rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. Claims 2 and 7-24 are also rejected under 35 U.S.C. 112, first paragraph, as being dependent upon a rejected base claim. In particular, the Examiner asserts that the amendment “an identification step of identifying an individual person being photographed based on a face in the face portions recognized in the image” is not supported in the specification, and thus, constitutes impermissible new matter.

Applicants respectfully request the Examiner to withdraw this rejection in view of the self-explanatory claim amendments made herein.

II. Claim Rejections - 35 USC § 103

Claims 1-2, 8-9, and 20-24 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Fuersich et al. (U.S. Pub. 2003/00440070) and further in view of Okano et al. (U.S. 6,404,903). Applicants traverse the rejection based on the following comments.

A. Claim 1

Claim 1 recites:

A face recognition method for recognizing face portions in an image based on image data of the image, comprising:

a detection step of detecting, in the image, eye portions which have undergone a predetermined color change, based on the image data;

a recognition step of recognizing face portions in the image based on the eye portions detected in the detection step;
an identification step of identifying an individual person being photographed based on the face portions recognized in the image; and
an inducing step of inducing the predetermined color change to occur in the eye portions of the image.¹

The predetermined color change in Fuersich is not induced intentionally, but happens at best unintentionally. In fact, Fuersich teaches that red-eyes are defects and are not used for the actual search and detection of faces (paragraphs 10, 11 and 20). Thus, red-eyes are not necessarily present for the detection of faces or face portions. That is, a failed detection of a red-eye in Fuersich does not preclude the detection of the eyes themselves for other purposes. Since a face value (i.e., the detection of a face) is used for detecting a red-eye defect, red-eyes are only detected and confirmed after a face is found, and even if a face is detected, red-eyes may not exist in the image (paragraphs 11, 46, 49 and 50).

On the other hand, the predetermined color change in the present invention is induced intentionally in the inducing step (e.g., see paragraph 101 of the present specification). Fuersich fails to teach or fairly suggest “an inducing step of inducing the predetermined color change to occur in the eye portions of the image,” as recited in claim 1, and using the eye portions detected which have undergone the predetermined color change for recognizing face portions in the image.

Moreover, Okano appears to teach that it is preferable that a predetermined color change (i.e., a discordant portion resulting from blur, out of focus, and even red-eye) does not exist such

¹ Emphasis added.

that a more accurate recognition result is determined (col. 3, lines 38-44, col. 4, lines 49-55 and col. 11, lines 18-25). Thus, Okano teaches against the presence of red-eyes and teaches away from using the red eye detected data for identification. Applicants submit that the Examiner must consider all teachings, including any disclosure in the cited art that teach away from the claimed invention.

In view of the above, Fuersich, alone or in combination with Okano, fails to teach or suggest each and every feature of claim 1. Therefore, claim 1 should be patentable for at least this reason.

B. Claim 20

Claim 20, as amended, recites that “the identification step is performed when the eye portions which have undergone the predetermined color change are detected.” (emphasis added)

Fuersich merely teaches determining whether a red area determined in step 18 is a red-eye defect in need of correcting by red-eye correction processing. However, this determination does not preclude from finding eye-candidates themselves (see paragraph 53). Thus, even if red-eyes are not detected, eye candidates are not precluded from detection according to Fuersich.

The Examiner asserts that Okano teaches the identification step. However, the “comparison” taught by Okano merely relies on a comparison of iris codes, and does not mention a detection eyes which have undergone a predetermined color change (col. 9, lines 51-53 and col. 10, lines 28-60). Thus, even if the eyes are open, it does not necessarily mean that eye portions which have undergone the predetermined color change are detected such that an identification step may be performed. The Examiner fails to consider whether a color change (i.e., red-eye) is

detected. Moreover, Okano appears to teach that it is preferable that a predetermined color change (i.e., a discordant portion resulting from blur, out of focus, and even red-eye) does not exist such that a more accurate recognition result is determined (col. 3, lines 38-44, col. 4, lines 49-55 and col. 11, lines 18-25). Thus, Okano teaches against the presence of red-eyes and teaches away from using the red eye detected data for identification. Furthermore, a failed detection of a red-eye in Fuersich does not preclude the detection of the eyes themselves for other purposes. However, Fuersich, alone or in combination with Okano, fails to teach or suggest performing the identification step based on the detection of eye portions which have undergone the predetermined color change. Applicants submit that the Examiner must consider all teachings, including any disclosure in the cited art that teach away from the claimed invention.

In view of the above, Applicants submit that claim 20 is patentable for at least these reasons.

C. Claim 21

Claim 21, as amended, recites that “the identification step includes: searching for face images stored in a storage section that match a face in the recognized face portions; and acquiring identification information stored in the storage section which is associated with a matched face image.”

In the rejection to claim 1, the Examiner asserts that the eyes of an individual which Okano uses for identification are the recognized face portions. However, the eyes of an individual is not a **face**. If the Examiner on relies on the eye detection to teach multiple aspects of the method, the Examiner is clearly engaging in improper double counting. The Examiner

asserts that Okano teaches the step of identifying individuals based on a face in recognized face portions (i.e., eyes) read in light of the Applicants' specification. However, the Examiner appears to interpret "face portions" as being equivalent to eyes. But the Examiner fails to correctly consider the face as being the determining object for identifying the person (e.g., see paragraph 107 of the present specification). Okano merely teaches searching through a recognition dictionary 2, which holds iris codes as data on features and user information (col. 9, lines 51-53). However, iris codes are not the equivalent to face images or a face in the recognized face portions according to the claim language of claim 21. Therefore, Fuersich, alone or in combination with Okano, fails to teach or suggest this feature.

D. Claim 23

Claim 23, as amended, recites that "the identification step is performed only when the predetermined color change is detected." However, claim 23 should be patentable for similar reasons presented above in conjunction with claim 20. In particular, even if eyes portions are detected, according to the disclosure of Okano, there is no suggestion that a color change must occur for an identification step to be performed. Furthermore, a failed detection of a red-eye in Fuersich does not preclude the detection of the eyes themselves for other purposes. There is simply no support for making the inference asserted by the Examiner. Therefore, claim 23 should be patentable for at least this reason.

E. Remaining claims

Applicants submit that the remaining claims are patentable at least by virtue of their respective dependencies.

III. Rejection of claims 3-7, 11-12, 14-15 and 17-18 under 35 U.S.C. § 103

Claims 3-7, 11-12, 14-15, and 17-18 stand rejected under 35 U.S.C. § 103 (a) as allegedly being unpatentable over Fuersich in view of Chen et al. (U.S. Pub. 2002/0081032), and in further view of Okano. However, claims 3-6 include analogous, though not necessarily coextensive features recited in claim 1, which the Examiner concedes is not taught by the combination of Fuersich and Chen. Thus, the Examiner asserts that Okano corrects the deficiencies of Fuersich and Chen by teaching, for example, “an individual recognition section which identifies an individual person being photographed based on the face portions recognized in the image.” However, Okano fails to correct the deficiencies of Fuersich and Chen, and thus, claims 3-6 are patentable for similar reasons discussed for claim 1.

In addition, Fuersich, alone or in combination with Chen and Okano, fails to teach or fairly suggest “wherein the predetermined color change is induced to occur in the eye portions of the image,” as recited in claims 3 and 6. None of the prior art teaches inducing the predetermined color change in the eyes.

Applicants submit that the remaining claims are patentable at least by virtue of their respective dependencies.

IV. Rejection of claim 10 under 35 U.S.C. § 103

Claim 10 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fuersich in view of Okano, and further in view of Nesterov et al. (U.S. 6,980,691). However, Applicants submit that claim 10 is patentable at least by virtue of its dependency upon claim 1. That is, Nesterov does not correct the deficiencies of Fuersich and Okano in conjunction with claim 1.

V. Rejection of claims 13, 16 and 19 under 35 U.S.C. § 103

Claims 13, 16 and 19 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Fuersich in view of Chen, further in view of Okano, and further in view of Nesterov. However, Applicants submit that claims 13, 16 and 19 are patentable at least by virtue of their dependencies upon claims 3, 4 and 6, respectively. That is, neither Chen, Okano nor Nesterov corrects the deficiencies of Fuersich in conjunction with claim 1.

VI. New claims


By this Amendment, Applicants have added new claims 25-27 to further define the claimed invention. Applicants respectfully submit claims 25-27 recite additional features which are not taught or suggested by the prior art of record.

VII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Ryan F. Heavener
Registration No. 61,512

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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